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**Meier**

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(54) **COMPUTERIZED AUDITORY SCENE  
ANALYSIS PARTICULARLY SUITED FOR  
UNDERSEA APPLICATIONS**

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(\*) **Notice:** Subject to any disclaimer, the term of this  
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U.S.C. 154(b) by 0 days.

(57) **ABSTRACT**

A digital signal processor is disclosed for analyzing sound  
signals to determine the identification of the sound and the  
location of the source of the sound, as well as to present its  
results as an auditory scene. The processing includes pro-  
ducing a gram representative of a sound signal in time,  
frequency, and space parameters, and then extracting ele-  
ments from the gram and features from the elements. The  
elements and the features are routed to an inference engine,  
which also receives predefined knowledge from a database.  
The inference engine derives conclusions, which are used to  
produce the auditory scene.

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(52) **U.S. Cl.** ..... 367/131; 367/124

(58) **Field of Search** ..... 367/87, 88, 99,  
367/118, 124, 131

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**24 Claims, 5 Drawing Sheets**

